STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 7319

Investigation into Green Mountain Power Corporation's)
2007 Integrated Resource Plan)

Order entered: 3/6/2008

I. INTRODUCTION

This Docket is an investigation of Green Mountain Power Corporation's ("GMP" or "the Company") Integrated Resource Plan ("IRP") that was filed on May 15, 2007. In this Proposal for Decision, I recommend that the Public Service Board ("Board") approve GMP's IRP, and approve agreements between the Vermont Department of Public Service ("DPS") and GMP on two issues related to GMP's IRP. These two issues are: (1) the implementation of a Conservation Voltage Reduction program in GMP's service territory starting in 2008; and (2) the integration of the effects of demand-side management programs and ISO-New England demand response programs into GMP's future forecasts.

II. PROCEDURAL HISTORY

On May 15, 2007, GMP filed its newest IRP. I am admitting GMP's IRP into evidence in this proceeding as exhibit GMP-1.[1]

On May 31, 2007, the Board opened an investigation into GMP's IRP and appointed Thomas Lyle, Utilities Analyst, as Hearing Officer.

On October 24, 2007, Mr. Lyle conducted a public hearing using Vermont Interactive Television sites in Brattleboro, Montpelier, Waterbury, White River Junction, and Williston.

1. Any party wishing to object to the admission of GMP's IRP into evidence should do so in its comments on this Proposal for Decision.

On November 29, 2007, I issued a scheduling order in which I informed the parties to this proceeding that the Board had appointed me Hearing Officer in this proceeding, replacing Mr. Lyle.

On December 13, 2007, the DPS filed a letter recommending that the Board approve GMP's IRP. The DPS's letter also stated that there were two areas in which the DPS believed it had reached agreements with GMP, which the DPS would seek to have reflected in a Board order in this proceeding. These two areas were the implementation of a Conservation Voltage Reduction program and the integration of the effects of demand-side management programs and ISO-New England's demand response programs into GMP's future forecasts. I am admitting the DPS's letter into evidence in this proceeding as exhibit DPS-1.[2]

On December 14, 2007, GMP filed a letter confirming that the DPS's December 13 filing accurately reflected the agreements between the two parties.

On January 8, 2007, I sent the parties to this proceeding a memorandum with two questions regarding GMP's IRP and the DPS-GMP agreements. The memorandum also requested that the parties indicate whether they would have any objections to the responses becoming part of the evidentiary record in this proceeding.

On January 22, 2007, GMP filed responses to my questions. In its filing, GMP stated that it had no objection to its responses becoming part of the evidentiary record in this proceeding. On January 29, 2007, the DPS filed a letter stating that it joins in GMP's responses and has no objection to their inclusion in the evidentiary record in this proceeding. I am admitting GMP's responses into evidence as exhibit Joint-1.

Based on the evidence in this Docket, I hereby report the following findings and conclusions to the Board in accordance with 30 V.S.A. § 8.

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2. Any party wishing to object to the admission of the DPS's letter into evidence should do so in its comments on this Proposal for Decision.

III. FINDINGS

GMP's IRP

1. GMP's IRP includes background information on GMP and the electric industry in the region. Exh. GMP-1 at 17–30.

2. GMP's IRP uses scenario planning to analyze its supply options. In this analysis, GMP modeled and evaluated 18 resource portfolio strategies (three variations of six portfolio choices) under four different scenarios regarding the energy future of the state, regional, and global marketplaces. Exh. GMP-1 at 5.

3. GMP's IRP includes base, high, and low 20-year energy and peak demand forecasts. GMP selected either the base, high or low forecast to use with each scenario, depending upon the conditions assumed as part of that scenario. Exh. GMP-1 at 31–33, 71, 111–145.

4. GMP developed three energy efficiency savings forecasts for each of the four scenarios evaluated in the IRP. The three energy efficiency forecasts were summer peak savings, winter peak savings, and annual energy savings. Exh. GMP-1 at 34–35, 147–150.

5. GMP's IRP includes information regarding GMP's current supply resources and the resource gap that GMP foresees in the future. Exh. GMP-1 at 37–38, 72–74.

6. GMP considered numerous supply options in developing its alternative resource portfolio strategies. Exh. GMP-1 at 75–88.

7. GMP used multi-attribute trade-off analysis to evaluate the portfolio strategies. The attributes considered by GMP over the 20-year planning period were: net present value requirement; societal net present value; short-term market and fuel price exposure; long-term hedged percentage; imputed debt; and emissions. GMP also measured a similar set of statistics at the year 2020, and stress-tested the better portfolios for short-term shocks to the system. Exh. GMP-1 at 91–101.

8. GMP's IRP discusses the current condition of GMP's transmission and distribution system, and describes GMP's transmission and distribution planning activities. Exh. GMP-1 at 38–51, 177–185.

9. GMP's IRP includes an action plan for implementing the conclusions identified through its IRP analysis. Exh. GMP-1 at 103–107.

10. GMP's IRP includes information regarding all the items it was required to address in this IRP under the terms of the stipulation it reached with the DPS regarding GMP's last IRP. Exh. GMP-1 at 203–207.

11. The DPS reviewed GMP's IRP to determine whether there were any areas in which the IRP needed to be supplemented, or whether further analysis or other matters should be included in a future IRP. The DPS identified only two "relatively minor" such areas, which are described in Findings 14-22, below. Exh. DPS-1 at 1.

12. GMP's IRP aims to determine a portfolio best suited to meet GMP's needs, as defined therein. It includes an analysis of several possible approaches to meeting those needs, and provides the basis for a preferred alternative and a direction for GMP to pursue. The action plan takes the recommendations emerging from the analysis and provides specific steps to aid GMP in its day-to-day activities. Exh. DPS-1 at 1.

13. GMP's IRP should serve as a useful document for GMP, regulators, and the general public. Exh. DPS-1 at 1.

Conservation Voltage Reduction ("CVR") Program

14. A CVR program is an energy efficiency program, applied to an electric utility's distribution system, involving measures and operating strategies designed to provide electricity service at the lowest practicable voltage level, and in a cost-effective manner, while meeting all applicable voltage standards. Exh. Joint-1 at 2.

15. Field studies have shown that, in general, a one percent reduction in the voltage delivered to customers results in a one percent reduction in energy consumption. Exh. Joint-1 at 2.

16. The first phase of CVR utilizes line drop compensation ("LDC"). LDC is a control device, connected to tap-changing transformers and voltage regulators, that measures feeder load current and computes the resultant voltage drop. The value of the voltage drop is then used by the tap changer or regulator to raise or lower the feeder voltage. Exh. Joint-1 at 2–3.

17. In the second phase of CVR, capital improvements are made on a feeder in order to reduce the overall voltage drop along the feeder. Exh. Joint-1 at 3.

18. Starting in 2008, GMP will perform CVR on a trial basis on GMP distribution circuits 32G7, 32G8, 33G2, 70G4, 81G1, and 81G2. Exh. DPS-1 at 2.

19. GMP's plan to implement CVR on a trial basis involves the following:

- selecting circuits that GMP's models show have higher than the required voltage (>114 volts) at the extremities;
- monitoring the actual voltage on the selected circuits for a period suitable to confirm the accuracy of the model at high load levels;
- adjusting the line drop compensation on the regulators serving the selected circuits to maintain 114 volts at the extremities of the selected circuits; and
- monitoring the actual voltage at extremities of the selected circuits to confirm that a minimum of 114 volts is maintained at high load levels.

Exh. Joint-1 at 1.

20. The purpose of the trial is to accomplish the following:

- to be certain that adequate voltage is maintained for all customers on the circuits subjected to CVR;
- to develop applicable techniques for applying CVR to multiple circuits that have a common regulation device (regulators or transformers with load tap changers); and
- to verify GMP's techniques before applying CVR to applicable circuits system wide.

Exh. Joint-1 at 1.

Forecasts

21. There appears to be some inconsistency between the forecasts presented in GMP's IRP and in GMP's recent rate filing under its Alternative Regulation Plan. The inconsistency is limited to the integration of the effects of demand-side management programs and ISO-New England demand response programs into the forecasts. Exh. DPS-1 at 2.

22. The effects of demand-side management programs and ISO-New England demand response forecasts should be integrated into future forecasts prepared by GMP. Exh. DPS-1 at 2.

IV. DISCUSSION

30 V.S.A. § 218(c) sets out the statutory standard that GMP's IRP must meet. Section 218(c) describes a "least cost integrated plan" as:

> a plan for meeting the public's need for energy services, after safety concerns are addressed, at the lowest possible present value life cycle cost, including environmental and economic costs, through a strategy combining investments and expenditures on energy supply, transmission and distribution efficiency, and comprehensive energy efficiency programs.[3]

The statute provides that the Board may approve a company's least-cost plan if it complies with the requirements of this definition. However, the statute does not specify what Board approval of an IRP means.

In Docket 6895, the Board's investigation into GMP's previous IRP, the Board concluded that approval would encompass the decision-making processes included in the IRP, but it would not include the specific decision-making tools, analytical methods, or outcomes described in the IRP.[4] At the same time, the Board stated that it would re-examine the scope of its approval of IRPs in the next round of IRPs (one of which is the IRP under review in this proceeding).[5] However, no party raised this issue in this proceeding, and I have not considered it. Accordingly, I recommend that the Board decline to re-examine the scope of its approval of GMP's IRP at this time, and instead determine that approval of GMP's current IRP would extend to the decision-making processes included in the IRP, but not the specific decision-making tools, analytical methods, or outcomes described in the IRP.

As the Board identified when it approved GMP's last IRP, the IRP under review in this proceeding is particularly important because of the resource decisions GMP will need to make when the Vermont Yankee and Hydro-Quebec power purchase contracts end in the 2012 to 2015 time period.[6] It is critical for GMP to plan now for the replacement of nearly two-thirds of its power supply. I am persuaded that GMP's IRP demonstrates that GMP is considering a broad range of resource options to meet its customers' future needs for electricity services at least cost.

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3. 30 V.S.A. § 218(c)(a)(1)
4. Docket 6895, Order of 7/13/06 at 8, 10.
5. "Considering the expiration of the Vermont Yankee contract in 2012 and the Hydro-Quebec contract a few years later, we expect that the next IRP will need to focus on concrete resource acquisition decisions. Although we will continue to decline to grant preapproval for resource acquisitions in the IRP process, it is appropriate in the context of these decisions to examine whether a greater degree of approval of GMP's methodologies is warranted." Docket 6895, Order of 7/13/06 at 10.
6. Docket 6895, Order of 7/13/06 at 8.

After reviewing GMP's IRP, the DPS's recommendation letter, and the other evidence in the record, I find that, with the two DPS-GMP agreements, GMP's IRP meets the requirements of 30 V.S.A. § 218(c). Therefore, I recommend that the Board approve GMP's IRP and the two DPS-GMP agreements. I discuss each of those agreements further below.

CVR Program

GMP has agreed to implement a CVR program on a trial basis on six circuits, starting in 2008. GMP has further agreed to submit a report to the Board and the DPS describing the results of the CVR trial by November 1, 2008. Following the submission of GMP's report, the DPS and GMP will work together to identify other circuits, if any, that are appropriate for CVR, and GMP will submit to the Board and the DPS a plan for the next phase of CVR activities by December 12, 2008.

Electric utilities around the country have implemented CVR programs. These programs have resulted in significant amounts of highly cost-effective energy savings.[7] I am interested to learn whether similar savings can be achieved in Vermont, and I am persuaded that the approach agreed to by GMP and the DPS regarding the implementation of a CVR program in GMP's service territory is reasonable. Therefore, I recommend that the Board approve the agreement between GMP and the DPS, and require GMP to: (1) implement the trial CVR program described above; (2) file a report describing the results of the CVR trial by November 1, 2008; (3) work with the DPS to identify other circuits, if any, that are appropriate for CVR; and (4) file a plan for the next phase of CVR activities by December 12, 2008.

Forecasts

It is important for an electric utility to use consistent forecasts in its various activities; if a utility uses inconsistent forecasts, it could make sub-optimal (or even conflicting) decisions. It is also important for the effects of demand-side management programs and ISO-New England's demand response programs to be integrated into an electric distribution utility's load forecasts.

7. Exh. Joint-1 at 2.

Both types of programs can meaningfully affect a utility's load forecasts.[8] I am pleased that GMP has recognized this and agreed to integrate the effects of these two types of programs in its future forecasts. I recommend that the Board approve the agreement between GMP and the DPS on this issue, and require GMP to perform this integration.

V. CONCLUSION

In this Proposal for Decision, I recommend that the Board approve GMP's IRP as filed on May 15, 2007, and approve agreements between GMP and the DPS in two areas related to GMP's IRP — CVR and forecasting. Specifically, I recommend that the Board require GMP to: (1) implement the trial CVR program described above; (2) file a report describing the results of the CVR trial by November 1, 2008; (3) work with the DPS to identify other circuits, if any, that are appropriate for CVR; (4) file a plan for the next phase of CVR activities by December 12, 2008; and (5) integrate the effects of demand-side management programs and ISO-New England demand response programs into its future forecasts.

This Proposal for Decision has been served on all parties to this proceeding in accordance with 3 V.S.A. § 811.

Dated at Montpelier, Vermont, this 20th day of February, 2008.

s/Ann Bishop
Ann Bishop
Hearing Officer

8. For example, energy efficiency services provided by the Energy Efficiency Utility from 2000 through 2006 reduced Vermont's statewide load growth during that time period by nearly two-thirds.

VI. BOARD DISCUSSION

On February 19, 2008, GMP and the DPS separately filed comments supporting the Hearing Officer's Proposal for Decision, and recommending its adoption by the Board.

VI. ORDER

IT IS HEREBY ORDERED, ADJUDGED AND DECREED by the Public Service Board of the State of Vermont that:

1. The findings and conclusions of the Hearing Officer are adopted.

2. The Integrated Resource Plan filed by Green Mountain Power Corporation ("GMP") on May 15, 2007, is approved.

3. The agreements between GMP and the Vermont Department of Public Service ("DPS") regarding Conservation Voltage Reduction ("CVR") and forecasting are approved.

4. Starting in 2008, GMP shall perform CVR on a trial basis on GMP distribution circuits 32G7, 32G8, 33G2, 70G4, 81G1, and 81G2.

5. On or before November 1, 2008, GMP shall file with the Board and the DPS a report describing the results of the CVR trial.

6. After filing the report on the CVR trial, GMP shall work with the DPS to identify other circuits, if any, that are appropriate for CVR.

7. On or before December 12, 2008, GMP shall file with the Board and the DPS a plan for the next phase of CVR activities.

8. GMP shall integrate the effects of demand-side management programs and ISO-New England demand response programs into its future forecasts.

Dated at Montpelier, Vermont, this 6th day of March, 2008.

s/James Volz	)	
	)	PUBLIC SERVICE
	)	
s/David C. Coen	)	BOARD
	)	
	)	OF VERMONT
s/John D. Burke	)	

OFFICE OF THE CLERK

FILED: March 6, 2008

ATTEST: s/Susan M. Hudson
Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: psb.clerk@state.vt.us)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further Order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and order.